

# 8631

Diag. Cht. No. 1209-3.

Form 504

U. S. DEPARTMENT OF COMMERCE  
COAST AND GEODETIC SURVEY

## DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. GI-10-1-6D Office No. H-8631

### LOCALITY

State Massachusetts

General locality Nantucket Sound

Locality East of Muskeget Channel

~~1961~~ 1960/61

CHIEF OF PARTY

Kenneth A. MacDonald

LIBRARY & ARCHIVES

SEP 26 1962

DATE

COMM-DC 61300

# 8631

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-8631

Field No. GI-10-1-60

State Massachusetts

General locality Nantucket Sound

Locality East of Muskeget Channel

Scale 1:10,000 Date of survey 1960-61

Instructions dated 21 Oct. 1957; 13 Oct. 1958; 16 Dec. 1958; 8 July 1960;  
29 Dec. 1960

Vessel Ship GILBERT

Chief of party Kenneth A. MacDonald

Surveyed by K.A. MacDonald, M.E. Jones, J.H. Blumer, D.D. Harper, J. Flynn

Soundings taken by fathometer, ~~graphic recorder~~ hand lead, ~~none~~

Fathograms scaled by personnel, Ship GILBERT

Fathograms checked by personnel, Ship GILBERT

Protracted by Alpha G. Atwill (Norfolk Processing Office)

Soundings penciled by Alpha G. Atwill

Soundings in ~~fathoms~~ feet at MLW ~~MLW~~

REMARKS: All corrections entered and checked

*Black line prints for H8631 filed in  
back of vault*

WS

NOTES TO ACCOMPANY DESCRIPTIVE REPORT  
SURVEY H-8631  
Field No. GI-10-1-60  
NANTUCKET SOUND, MASSACHUSETTS  
EAST OF MUSKEGET CHANNEL

Ship GILBERT

Kenneth A. MacDonald, Comdg.

1960 and 1961 Field Seasons

Surveyed by:

LTJG D. D. Harper  
LTJG J. Flynn  
LTJG M. E. Jones  
LTJG J. H. Blumer

A. PROJECT

Project No. OPR-369, Nantucket Sound, Mass. Instructions dated as follows:

21 October 1957  
13 October 1958  
16 December 1959  
29 December 1960  
8 May 1961 (photo instructions)

Pertinent letters as follows:

From Chief, OPR Div., 3 October 1961

B. AREA SURVEYED

For survey limits and general area see attached Index of Hydrographic Sheets. This survey is indicated by red crosshatching at the corners.

The area in general is shoal, with many bars, heavy currents and tide rips, and with very changeable bottom. The islands of Muskeget and Tuckernuck, included in the survey, are low and sandy, with very changeable shoreline at some points.

Dates of the survey are 14 May 1960 to 31 August 1960 inclusive, and 15 August 1961 to 13 October 1961 inclusive.

Prior surveys with which junctions are made are H-1844 on the south and west, H-1878 and H-1947 on the north, and H-1878 on the east.

Contemporary surveys with which junctions are made are H-8497 + H-8172 on the east, and Field No. GI-12.5-1-60 (which is not complete) on the north.

### C. SOUNDING VESSEL

The bulk of the sounding was done with launch CS-1176, using a blue day letter.

The shoal area between Muskeget and Tuckernuck Islands was sounded from a catamaran skiff arrangement, using red day letters.

### D. SOUNDING EQUIPMENT

All echo sounding was done with 808-type fathometers. The serial numbers are as follows:

159 SPX  
162 SPX  
161 SPX  
S 108

All fathometers were calibrated for 820 fathoms/second.

In the shoal area between Muskeget and Tuckernuck Islands, a sounding pole was used.

Velocity corrections were obtained from bar checks taken daily, or oftener, weather permitting.

### E. SMOOTH SHEET

The smooth sheet will be plotted by the Norfolk Office, Processing Section.

### F. CONTROL

Visual control was used on inshore work around Muskeget and Tuckernuck Islands; most of the signals were located by photogrammetric methods from planimetric manuscripts T-11219 and T-11216. The remainder of the signals were located by hydrographic methods and are recorded in the record books.

All work except the above was accomplished using shoran control, with stations POGE and GAMM. POGE is on Cape Poge and was located geodetically. GAMM is on Pt. Gammon, and ~~is at Station~~ was located ~~GAM, 1954.~~ A complete list of signals with origins is enclosed, and one is included inside the front cover of Volume 1, launch 1176.

### G. SHORELINE

Shoreline on the boat sheet is from photo manuscripts T-11219 and T-11216. However, the west end of Tuckermuck Island and the southwest and east ends of Muskeget Island are subject to frequent and rapid changes.

For example, in 1960 Signal SEA was established on a small sandbar islet just southwest of Muskeget Island. This islet completely disappeared during tropical storm Brenda in 1960. In 1961 when the party returned to the area to resume work, they found the islet rebuilt much bigger than before. ✓

During the 1961 field season, a photo party under G. Wilson was working in the area under instructions dated 8 May 1961, using photos taken in April 1961. Shoreline was revised by this party and was therefore not revised by the hydro party.

Shoreline for the smooth sheet should be taken from the new manuscripts whenever available. ✓

### H. CROSSLINES

Crosslines were run to an extent of about 6% of the regular scheme. Crosslines are in good agreement wherever the crossline crosses work done the same season. However, because of extensive changes in the bottom, crosslines in the shoal areas between 1960 and 1961 field seasons do not check in many places where they cross work from a different season. ✓

### I. JUNCTIONS

Junction with contemporary survey H-8497 on the east is in general agreement. ✓

Junction with prior survey H-1844 on the south and west is in general disagreement. All shoals surveyed on the south junction are either non-existent on the prior survey or have moved. The shoal awash at Lat.  $41^{\circ} 19'$ , Long.  $70^{\circ} 23'$  on the west junction is non-existent on the prior survey, which shows about 21 feet of water in this area.

Junction with prior survey 1947 on the north shows some general agreement. However, shoals at Lat.  $41^{\circ} 22'$ , Long.  $70^{\circ} 19'$  and at Lat.  $41^{\circ} 22'$ , Long.  $70^{\circ} 16'$  on the prior survey are non-existent on this survey.

Field No. GI-12.5-1-60 is in progress and will <sup>join</sup> junction with this survey on the north when completed next season.

#### J. COMPARISON WITH PRIOR SURVEYS

Comparison with prior surveys H-1844 and H-1947 shows general disagreement in most areas. The highly changeable nature of the area and the long lapse of time since the prior surveys would make a detailed comparison here absurd.

#### K. COMPARISON WITH CHART

Comparison with Chart 1209, scale 1:80,000, 9th edition, revised 5 December 1960, shows the same type of disagreement as the comparison with prior surveys. See smooth plotter's notes for detailed comparison.

#### L. ADEQUACY OF SURVEY

The survey is complete and as adequate as the shifting bottom permits. This survey should supersede prior surveys for charting; but the shoal areas, especially the large area west of Muskeget Island and between Tuckernuck and Muskeget Islands, are so changeable that its value for charting purposes is doubtful. ✓

Depth curves where 1960 work was split down in 1961 show a very definite change between the two seasons. It is suggested that the two seasons' work be plotted separately and the depth curves compared, so as to get a good picture of the changes that occurred in one year. ✓

#### M. AIDS TO NAVIGATION

There are no fixed or floating aids within the limits of this survey. ✓

No landmarks are recommended for charting. ✓

#### N. STATISTICS

<u>Vessel</u>	<u>Number of Positions</u>	<u>Nautical Miles of Sounding Lines</u>
Launch CS 1176	5379	883.2
Catamaran	941	70.7
Total	6320	953.9

Total area surveyed: 41.9 square nautical miles.

Submitted:

*Kenneth A. MacDonald*  
Kenneth A. MacDonald  
LCDR, C&GS

PROJECT OPR-369

1960-61

26  
CHART NO. 71 1:500,000

## TIDE NOTE

Sheet Field No. GI-10-1-60, Nantucket Sound, Mass., Muskeget Island

Tide reducers for all of the soundings on the above survey were obtained from a portable tide gage on the north shore of Muskeget Island at Lat.  $41^{\circ} 20.2'$ , Long.  $70^{\circ} 18.3'$ , time meridian  $75^{\circ}$ .

For several periods during which the gage was out of operation, hourly heights were furnished by the Washington Office. These periods were as follows:

July 5, 1960	1800-1900
Aug. 2, 1960	1800
Aug. 24, 1961	1400-1600
Sept. 14	1200-1400
Sept. 27	1200-1700
Sept. 28	0700-1700
Sept. 29	0700-1200
Oct. 5	1200-2100
Oct. 6	0700-1700
Oct. 7	0600-2100
Oct. 8	0500-1100
Oct. 10	0700-1200
Oct. 12	0900-1600
Oct. 13	0700-1300

During 1960 the gage was releveled three times due to shifting of the staff from heavy surf and other unknown causes. The Washington Office, after receipt of all records, furnished values for MLW on tide staff in a letter from the Chief, Marine Data Division, 2221-8-982g1, 18 January 1961.

Following are values for MLW on the staff:

1960	May-June	2.4 feet
1960	July	2.2 feet
1960	August	2.5 feet
1961	All season	1.7 feet

No corrections were applied for differences in time or height.

Kenneth A. MacDonald  
LCDR, C&GS  
Commanding Ship GILBERT

ABSTRACT OF BAR CHECKS  
LAUNCH 1176  
1960

Date	5'	10'	20'	30'	40' "A" Scale	40' "B" Scale	50' "A" Scale	50' "B" Scale	
				Fathometer 162 SPX					
8 June	0.0	-0.1	-0.2	-0.5	-0.5	-1.0			
	0.0	0.0	-0.4	-0.7	-0.7	-1.0			
20 May	-0.1	-0.1	-0.1	-0.3	-0.4	-0.3	-0.5	-0.5	
	0.0	0.0	-0.1	-0.2	-0.5	-0.3	-0.5	-0.8	
21 May	0.0	0.0	0.0	-0.2	-0.3	-0.6	-0.2	-0.5	
	0.0	0.0	-0.2	-0.8	-1.0	-0.7	-0.2	-1.0	
2 June	-0.2	0.0	0.0	0.0	0.0	-0.8	-0.2	-1.0	
	-0.3	0.0	0.0	0.0	0.0	-1.0	0.0	-1.0	
13 Aug.	-0.3	-0.3	-0.4	-0.8	-0.8	-0.2	-0.8	-0.2	
	-0.5	-0.4	-0.6	-0.4	-0.8	0.0	-1.0	-0.4	
TOTAL	-1.4	-0.9	-2.0	-3.9	-5.0	-5.9	-3.4	-5.4	
MEAN	-0.14	-0.09	-0.2	-0.39	-0.5	-0.59	-0.42	-0.68	
				Fathometer 159 SPX					
17 May	0.3	0.2	0.0	-0.1	-0.4	0.5	-0.5	0.2	
	-0.1	0.0	-0.2	-0.5	-0.7	0.5	-0.5	0.1	
19 May	-0.1	0.0	-0.1	-0.3	-0.5	0.7			
	-0.1	-0.1	-0.2	0.0	-0.3	0.7			
1 July		-0.3	-0.5	-0.8	-0.9				
		-0.2	-0.3	-0.5	-0.9				
14 May		-0.1	-0.5	-0.5	-0.5	-0.2			
	0.0	-0.1	-0.2	-0.5	-0.5	-0.1			
16 May	-0.2	-0.1	-0.3	-0.2	-0.2	1.0	-0.1	1.0	
	-0.1	-0.2	0.0	-0.6	-0.5	0.9	-0.2	1.0	
19 May	-0.1	-0.2	-0.5	-0.8	-1.2	0.2	-1.0	0.2	
	0.0	-0.1	-0.4	-0.6	-1.1	0.3	-1.0	0.5	
16 June	0.0	0.0	0.2	0.2	0.0	-0.5	-0.2	-0.5	
	0.0	-0.2	-0.2	0.0	0.0	-0.8	-0.2	-0.7	
19 June	-0.3	0.0	0.0	0.1	0.0	0.0	0.1	0.1	
	0.0	0.2	0.0	0.2	0.1	0.1	0.2	0.2	
	0.0	-0.2	-0.5	-0.5					
		-0.2	-0.2	-0.5					
TOTAL	-0.7	-1.6	-3.9	-5.9	-7.6	3.3	-3.4	2.1	
MEAN	-0.05	-0.09	-0.22	-0.33	-0.48	0.24	-0.34	0.21	

## ABSTRACT OF VELOCITY CORRECTIONS

Fathometer No. 159 SPX

GI-10-1-60 and GI-12.5-1-60

<u>Depth</u>	<u>Correction</u>	<u>Scale</u>
0.0 - 9.7	0.0	A
- 26.6	-0.2	A
- 55.0	-0.4	A
35.0 - 86.0	0.2	B
- 90.0	0.0	B

<u>Date</u>	<u>Survey</u>	<u>Day letter</u>
14 May 1960	GI-10-1-60	a
15 May		b
16 May		c
17 May		d
18 May		e
19 May		f
20 May		g
16 June		q
18 June		s
19 June		t
21 June	GI-12.5-1-60	u
22 June		v
2 Aug.		x
3 Aug.		y
14 May		a
16 May		b
18 May		c
19 May		d
20 May		e
9 June		p
14 June		q
16 June		r
19 June		u
20 June		v
23 June		w
30 June		x
2 Aug.		z
3 Aug.		aa
9 Aug.		ba
10 Aug.		ca
15 Aug.		fa

ABSTRACT OF VELOCITY CORRECTIONS  
 Fathometer No. 162 SPX  
 GI-10-1-60 and GI-12.5-1-60

<u>Depth</u>	<u>Correction</u>	<u>Scale</u>
0.0 - 25.4	-0.2	A
- 55.0	-0.4	A
35.0 - 52.0	-0.6	B
- 74.0	-0.8	B
- 90.0	-1.0	B

<u>Date</u>	<u>Survey</u>	<u>Day letter</u>
21 May 1960	GI-10-1-60	h
2 June		j
3 June		k
4 June		l
6 June		m
7 June		n
8 June		p
17 June		r
18 June		s
10 Aug.		z
12 Aug.		aa
13 Aug.		ba
14 Aug.		ca
26 Aug.		da
28 Aug.		ea
29 Aug.		fa
31 Aug.		ga
20 May	GI-12.5-1-60	e
21 May		f
2 June		g
3 June		h
4 June		j
5 June		k
6 June		l
7 June		m
8 June		n
16 June		r
17 June		s
18 June		t
4 July		y
10 Aug.		ca
12 Aug.		da
13 Aug.		ea
15 Aug.		fa

ABSTRACT OF BAR CHECKS, PROJECT OPR-369  
HYDROGRAPHIC SURVEYS Nos. GI-10-1-60 AND GI-12.5-1-60

1961

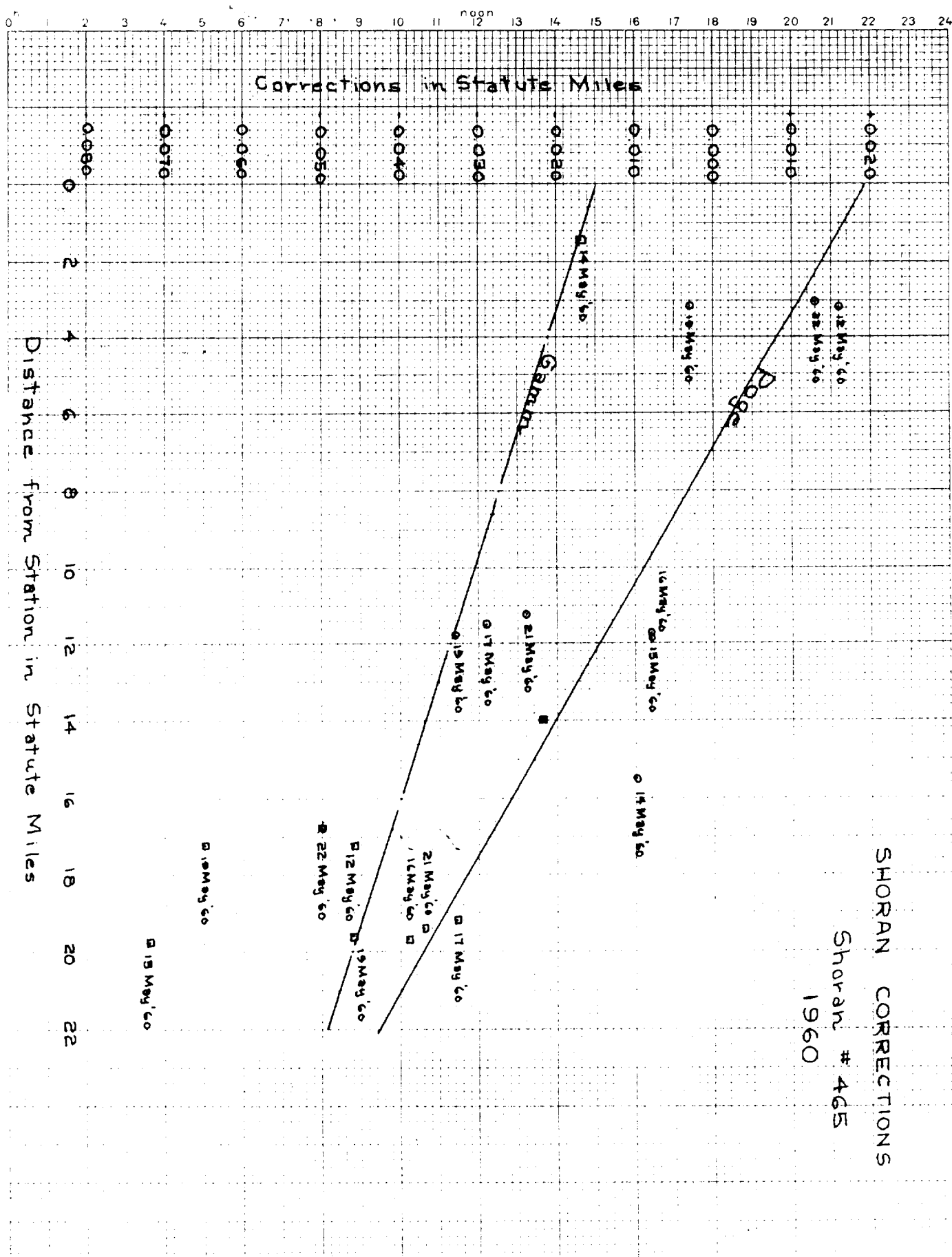
808 Fathometers 162 SPX and S 108

Date	5'	10'	20'	30'	40' "A" Scale	50' "A" Scale	40' "B" Scale	50' "B" Scale	Remarks
23 Aug.	-0.2	0.1	0.4	0.6	1.0	1.0	-1.0	-0.4	fair
	0.0	0.1	0.5	0.6	0.8	M	-1.0	M	fair
	-0.2	-0.1	-0.1	0.0	0.2	M	M	M	fair
	0.0	0.0	0.2	0.2	0.3	M	M	M	fair
24 Aug.	0.0	0.0	0.0	0.0	-0.2	M	M	M	fair
	M	0.0	0.0	0.0	0.0	M	M	M	fair
25 Aug.	0.0	-0.1	-0.2	-0.2	-0.2	M	M	M	good
	0.0	0.0	0.0	-0.2	-0.2	M	M	M	good
	-0.2	0.0	0.0	0.0	0.3	M	-1.4	-1.1	fair
	-0.4	0.0	0.0	0.2	0.4	M	-1.4	M	fair
26 Aug.	0.0	0.0	-0.1	0.0	0.0	0.0	-0.8	-0.7	good
	0.0	0.0	0.0	0.0	0.0	0.2	-0.7	-0.7	good
27 Aug.	0.0	0.0	0.2	0.1	-0.2	M	M	M	good
	M	-0.2	-0.3	0.0	0.0	M	M	M	good
	-0.2	-0.2	0.0	0.0	-0.2	M	-0.6	M	fair
	0.0	0.0	0.0	0.0	-0.1	M	-0.4	M	fair
28 Aug.	0.0	0.2	0.2	0.6	0.5	0.6	-1.0	-1.1	poor
	0.0	0.0	0.3	0.6	0.7	M	-1.2	M	poor
29 Aug.	M	-0.3	0.0	-0.4	-0.1	M	M	M	poor
	-0.2	0.0	0.0	-0.1	-0.1	-0.2	M	M	poor
	0.0	-0.2	0.0	-0.4	-0.3	0.0	-0.8	M	poor
	-0.2	0.0	-0.2	-0.1	0.0	M	-1.0	M	poor
30 Aug.	-0.2	0.0	0.0	-0.2	0.2	M	-1.2	M	poor
	0.0	0.3	0.3	0.2	-0.2	M	-1.2	M	poor
8 Sept.	0.0	0.0	0.0	0.0	0.0	0.0	-1.0	-0.9	fair
	-0.1	0.1	0.0	0.0	0.0	0.1	-1.0	-0.9	fair
	0.0	0.0	0.0	0.1	0.2	M	-1.0	-1.0	fair
	0.0	0.0	0.0	0.2	0.2	M	-0.5	M	fair
9 Sept.	0.0	-0.1	0.2	0.3	0.0	0.2	-0.9	-0.9	fair
	0.0	-0.1	-0.2	0.0	0.1	0.2	-0.7	M	fair
12 Sept.	0.0	0.2	0.3	0.1	0.2	M	-1.0	M	fair
	-0.1	0.0	0.2	0.2	0.3	M	M	M	fair
14 Sept.	0.0	0.1	0.5	0.4	0.4	M	-0.6	-0.9	fair
	0.0	0.0	0.4	0.1	0.6	M	-0.7	M	fair
	0.0	0.0	0.1	0.1	0.2	0.2	-1.0	M	fair
	-0.2	0.0	0.3	0.0	0.4	M	-1.0	M	fair
27 Sept.	0.0	0.0	0.0	-0.1	0.0	0.0	-1.2	M	good
	0.0	0.0	0.0	0.0	0.0	0.2	-1.1	-1.0	good
28	0.0	-0.1	-0.2	M	-0.5	M	-1.0	M	good
	0.0	-0.2	-0.2	M	M	M	M	M	good
	0.0	0.2	0.0	0.0	0.0	M	-1.0	M	good
	0.0	0.1	0.0	0.0	M	M	M	M	good

808 Fathometers 162 SPX and S 108

[illegible]

Station:



## ABSTRACT OF SHORAN CORRECTIONS

OPR-369

LAUNCH CS 1176      GI-10-1-60

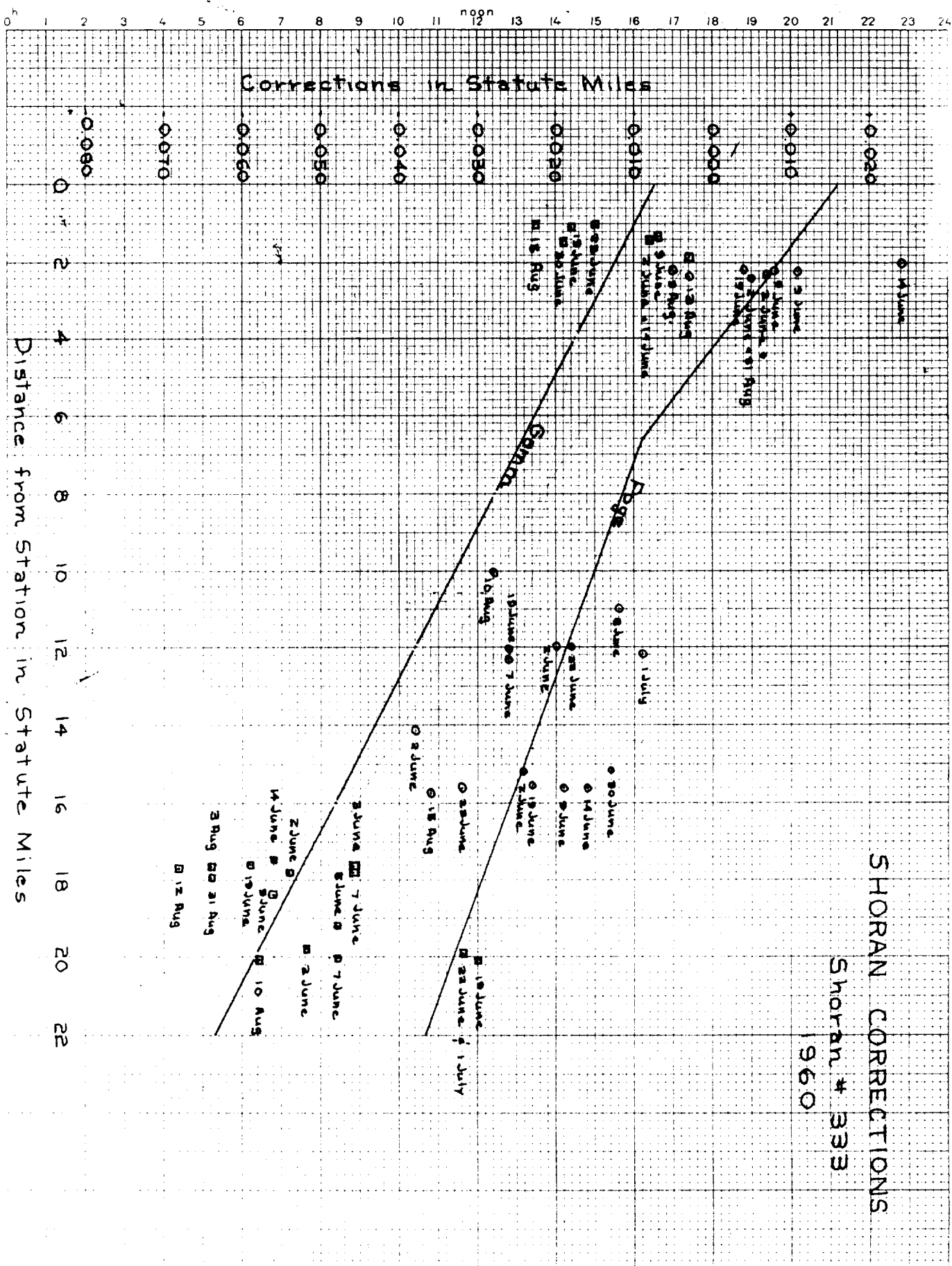
14 May - 21 May 1960

## STATION POGE

## STATION GAMM

<u>Distance</u>	<u>Correction</u>	<u>Distance</u>	<u>Correction</u>
0.0--1.6	0.020	0.0--6.6	-0.020
--5.1	0.010	--13.0	-0.030
--8.6	0.000	--19.3	-0.040
--12.1	-0.010	--22.0	-0.050
--15.7	-0.020		
--19.3	-0.030		

Station:



## ABSTRACT OF SHORAN CORRECTIONS

OPR-369

LAUNCH CS 1176      GI-10-1-60

2 June - 31 August 1960

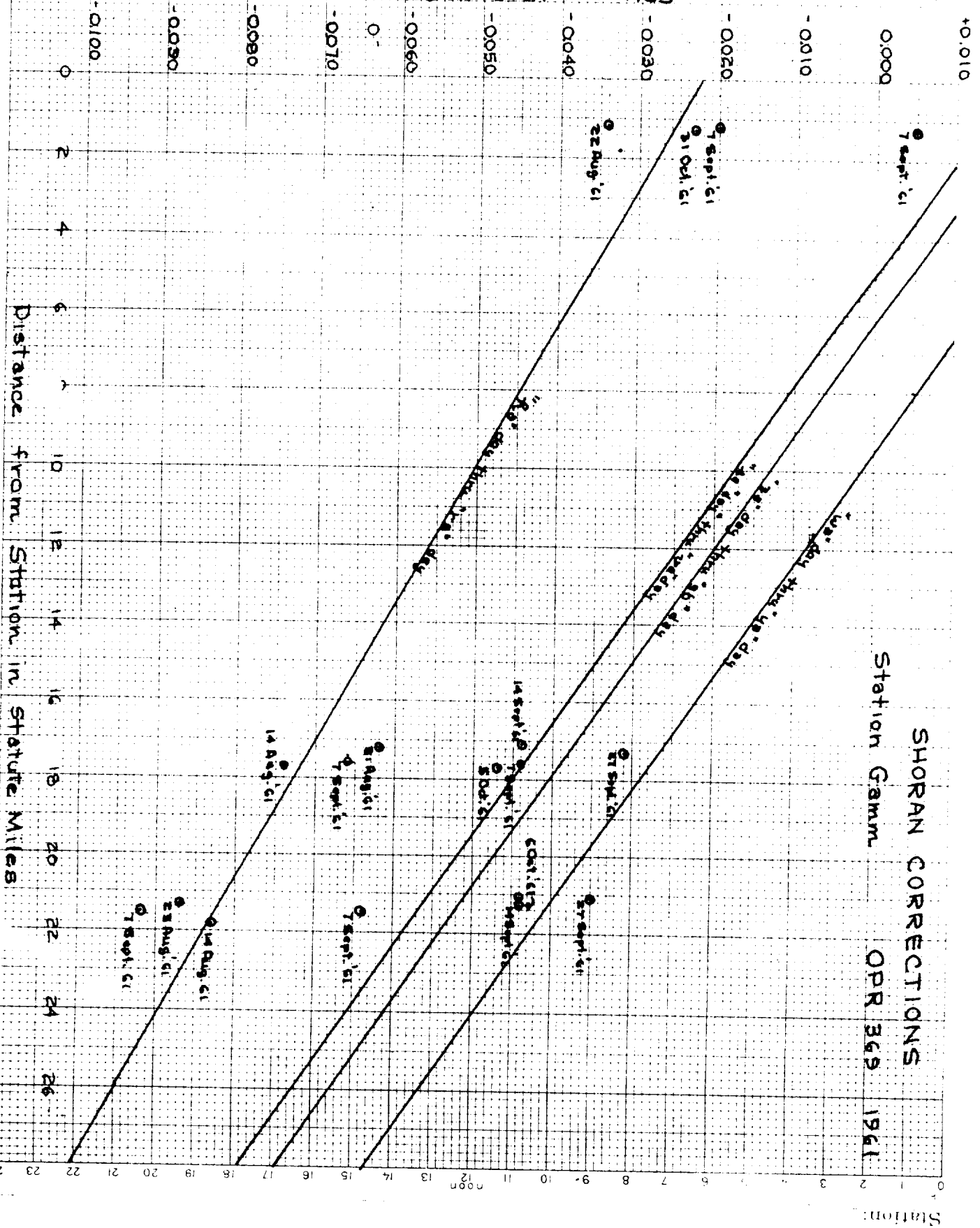
## STATION POGE

## STATION GAMM

<u>Distance</u>	<u>Corrections</u>	<u>Distance</u>	<u>Corrections</u>
0.0--2.9	0.010	0.0--3.0	-0.010
--5.5	0.0	--6.9	-0.020
--9.6	-0.010	--10.8	-0.030
--16.0	-0.020	--15.0	-0.040
--20.0	-0.030	--18.7	-0.050
		--21.0	-0.060



# Correction in Statute Miles



ABSTRACT OF SHORAN CORRECTIONS  
 OPR-369  
 LAUNCH CS 1176      GI-10-1-60

	STATION POGE		STATION GAMM	
<u>Dates</u>	<u>Distance</u>	<u>Correction</u>	<u>Distance</u>	<u>Correction</u>
15 Aug. - 30 Aug. 1961	4.5—5.2	0.015	16.1—17.9	-0.070
	—7.5	0.010	—19.6	-0.075
	—10.0	0.005	—21.4	-0.080
	—12.3	0.000	—23.2	-0.085
	—13.5	-0.005		
8 Sept. - 9 Sept.	4.5—5.2	0.015	16.5—17.5	-0.040
	—7.5	0.010	—18.8	-0.045
	—10.0	0.005	—20.3	-0.050
	—12.3	0.000	—21.7	-0.055
	—13.5	-0.005	—22.5	-0.060
12 Sept. - 14 Sept.	4.5—5.1	0.020	16.5—17.5	-0.040
	—7.6	0.015	—18.8	-0.045
	—9.9	0.010	—20.3	-0.050
	—12.4	0.005	—21.7	-0.055
	—13.5	0.000	—22.5	-0.060
27 Sept. - 29 Sept.	4.5—5.1	0.020	16.5—17.5	-0.025
	—7.6	0.015	—19.0	-0.030
	—9.9	0.010	—20.5	-0.035
	—12.4	0.005	—21.9	-0.040
	—13.5	0.000	—22.5	-0.045
5 Oct. - 13 Oct.	4.5—5.1	0.020	16.5—17.1	-0.035
	—7.6	0.015	—18.6	-0.040
	—9.9	0.010	—20.1	-0.045
	—12.4	0.005	—21.6	-0.050
	—13.5	0.000	—22.5	-0.055

## LIST OF STATIONS ON H-8631 (GI-10-1-60)

Name	Origin	Remarks
APE	<del>Signal Vol. 1, page 2</del> T-11216	<i>Note: All stations circled in red were transferred directly from air-photo compilations - Those in blue were plotted from sextant cuts recorded in volumes - H.B.P.</i>
AXE	T-11219	
BAR	T-11219 & Signal Vol. 1, page 6	
BOB	T-11219	
BUS	<del>Signal Vol. 1, page 3</del> T-11216	
CAS	<del>Signal Vol. 1, page 5</del> T-11219	
CHI	<del>T-11219</del> T-11216	E. CHIMNEY, 1955
COB	T-11219	
COW	T-11219 Signal Vol. 1, page 7	POLE, 1955 Called POLE at cut
CUP	T-11219	CUPOLA, 1955
DOT	T-11216	
DUM	T-11219	
DUN	<del>T-11219</del> T-11216 & Signal Vol. 1, page 2	
EAT	T-11216	
EIM	T-11219	
END	<del>Signal Vol. 1, page 6 &amp; Skiff Vol. 2, page 33</del> T-11216	
FIG	T-11216	
FOG	T-11219	
GAM	T-11219	
GAMM		GAMM, 1954 Position Computation Attached
GAY	Skiff Vol. 2, page 42	
GOO	T-11216	

GUL	<del>Signal Vol. 1, page 2</del>	<del>T-11216</del>	
GUT	<del>Signal Vol. 1, page 5</del>	<del>T-11219</del>	
HID	Signal Vol. 1, page 4		
HIL	Skiff Vol. 2, page 42		
HIM	T-11216		W. <u>CHIMNEY</u> , 1955
JOE	T-11219		
MID	<del>T-11216</del>		Same as SIN
MOP	Skiff Vol. 2, page 42		
NEX	<del>Signal Vol. 1, page 7 &amp;</del>		CHIMNEY, 1955
or	<del>T-11219</del>		
POP	<del>T-11219</del>		
NOR	<del>Signal Vol. 1, page 6 &amp;</del>	<del>T-11216</del>	
	<del>Skiff Vol. 2, page 33</del>		
ORA	T-11219		
PEP	<del>Signal Vol. 1, page 5</del>	<del>T-11219</del>	
POGE			Position computation attached
POP	T-11219		
QUO	T-11219		
RAG	<del>Signal Vol. 1, page 5</del>	<del>T-11219</del>	
RAT	T-11219		
RIM	T-11219		
SAD	Skiff Vol. 2, page 42		
SAN	<del>Signal Vol. 1, page 3</del>	<del>T-11216</del>	
SEA	<del>Signal Vol. 1, page 4 &amp;</del>		
	<del>Skiff Vol. 1, page 36</del>		
SHA	T-11219		<u>SHACK</u> , 1955 <del>Rejected Vol. 1, page 4, '61</del>

*Sec Mid*  
 SIN ~~Signal Vol. 1, page 7 &~~  
~~Skiff Vol. 2, page 33~~

SOX ~~Signal Vol. 1, page 5~~ T-11219

TAC ~~Signal Vol. 1, page 5~~ T-11219

TANK T-11219

TANK, 1955

TAR ~~Signal Vol. 1, page 5~~ T-11219

UTE T-11219

VEX T-11219

WEE Vol. 5, page 13, '61 T-11219 -

WEST T-11219

WEST CUPOLA, 1955

YES T-11219

**APPROVAL SHEET**

The boat sheet and records, through checking of all correctors, are complete and approved. The boat sheet and sounding volumes were examined daily during the survey.

The survey is complete, but because of the large changes in depth between 1960 and 1961 is not considered adequate for charting in shoal areas.

*Kenneth A. MacDonald*  
Kenneth A. MacDonald  
LCDR, C&GS  
Commanding Ship GILBERT

NORFOLK PROCESSING OFFICE ADDENDUM  
To Accompany

HYDROGRAPHIC SURVEY H-8631 (G1 10-1-60)

GENERAL

Considering the changable character of the bottom in this area and the weather conditions experienced during the period soundings were obtained, this appears to be an excellent basic survey.

SOUNDINGS

The bottom in the entire area appears to be subject to constant change. It is covered with bars and sand-waves, and is subject to strong currents, tide rips and breakers. As a result, there is a considerable amount of variation in launch speed over a type of bottom where even minor position displacement will cause some discrepancies at crossings. The hydrography was done in two field seasons, and there were two hurricanes during the period, Brenda in July 1960 and Donna in Sept. 1960. (Donna was not mentioned in the body of this report, but according to the Weather Bureau the area caught the full force of the storm).

Because of changing conditions during the progress of the survey, soundings were penciled starting with the last day of the 1961 field season and working backwards through the sounding volumes. In cases of disagreement in depths, and particularly where 1960 soundings were not needed to fill in holidays, the more recent soundings were penciled on the smooth sheet and the ones omitted were inked on an overlay to accompany the smooth sheet. Considering all the unfavorable factors involved, except for soundings in shoal depths where maximum changes occurred, soundings are in fairly good agreement at crossings.

The following is a list of 1960 soundings which, because of general disagreement with later work, were not penciled on the smooth sheet but are being submitted on an overlay for comparison purposes:

Launch 1176 (blue)

1-9y	33-35ba & 96-103ba
1-13d & 78-86d	38-42W
77-84aa	145-151v
1-17r & 20-22r	92-99va
35-45j	
1-3ca & 159-165ca	

Pole soundings - Catamaran (pole)

199-200b	44-59d & 22-26d
24-26c & 28-34c	86-98e

## SOUNDINGS Cont.

Various other study overlays prepared by the smooth plotter are being submitted with the smooth sheet for possible use during verification.

All pole work (a thru f days, red), which largely centers in the area of Tuckernuck Bank, was done between 1 and 19 July 1960. These soundings are in general disagreement with junctional fathometer soundings taken at later dates.

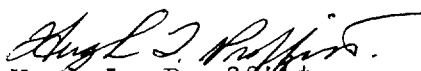
Launch days a thru w (blue) were done between May and 1 July 1960, before Brenda. Days x thru ga (blue) were done in Aug. 1960 between hurricanes. Days ha thru gb (blue) from August thru October 1961 were done after both hurricanes. Except for the pole soundings, the 1960 work checks itself very well. The 1961 work shows some shifting of most shoals.

## CHART COMPARISON

A detailed comparison was not attempted as the present survey bears little relationship to the area as shown on chart 1209.

Norfolk, Va.  
19 Sept. 1962

Respectfully submitted,



Hugh L. Proffitt  
Supvr. Cartographer

GEOGRAPHIC NAMES  
Survey No. H-8631

Name on Survey	GEOGRAPHIC NAMES Survey No. H-8631									
	A	B	C	D	E	F	G	H	K	BGN
	On Chart No. 1209	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List		
Bass Ledge	x									1
East Pond	x									2
Muskeget Channel	x									3
Muskeget Island	x									4
Muskeget Rock	x									5
North Pond	x									6
Tuckernuck Bank	x									7
Tuckernuck Island	x									8
										9
										10
										11
										12
										13
										14
										15
										16
										17
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										25
										26
										27

*George J. Baker*  
Geographic Names Section  
10 October 1962

## Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8631

Records accompanying survey: Smooth sheets 1....;

boat sheets 1....; sounding vols. 32....; wire drag vols. ....;

Descriptive Reports 1....; graphic recorder envelopes 24....;

special reports, etc. 2-Rolls of stuy overlays; 1 Cahier - .....

.Shoran abstracts and 1-Roll of Misc. Material. 1-Smooth sheet overlay.

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	6320
Number of positions checked	398
Number of positions revised	33
Number of soundings revised (refers to depth only)	832
Number of soundings erroneously spaced	32
Number of signals erroneously plotted or transferred	0
Topographic details	Time 20
Junctions	Time 24
Verification of soundings from graphic record	Time 40
Special adjustments	Time 100

Verification by *George F. Merrill* Total time 1104 Date 7-7-64

Reviewed by ..... Time ..... Date .....

VERIFIER'S REPORT OF HYDROGRAPHIC SURVEY NO. H- 8631

The verifier should deal with the present hydrographic survey only, as the reviewer considers its relation to previous surveys and published charts. He should be thoroughly familiar with Chapters 3, 7 and 9 of the Hydrographic Manual.

1. The descriptive report was consulted and appropriate notes were made in soft pencil regarding action taken. ✓
2. Soundings originating with the survey and mentioned in the descriptive report have been verified, including latitude and longitude. ✓
3. All reference to survey sheets mentioned in the descriptive report include the registry number and year. ✓
4. Geographic names of hydrographic features if on sheet are in slanting lettering and of topographic features in vertical lettering. ✓
5. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken. ✓
6. All positions verified instrumentally were check marked in the sounding records. ✓
7. All critical soundings are clear and legible and are a little larger than the adjacent soundings. ✓
8. The metal protractor has been checked within the last three months.  
5-21-64
9. The protracting and plotting of all bad crossings were verified. ✓
10. All detached positions locating critical soundings, rocks or buoys were verified. ✓
11. The boat sheet was compared with the smooth sheet. ✓

12. The spacing of soundings as recorded in the records was closely followed. ✓
13. The bottom characteristics were shown on outstanding shoals. ✓
14. The reduction and plotting of doubtful soundings were checked. ✓
15. The transfer of contemporary topographic information was carefully examined. ✓
16. All junctions were transferred and overlapping curves made identical. ✓
17. The notation "JOINS H- (19--)" was added in ink for all contemporary adjoining or overlapping sheets now registered. Those not verified are shown in pencil.  
*East H-8497*
18. The depth curves have been inspected before inking.  
*Mr. BENSON*
19. All triangulation stations and transfer of topographic and hydrographic signals were checked. ✓
20. Heights of rocks were checked against range of tide. ✓
21. Rocks transferred from topographic surveys have a dotted curve where shown thereon. Rocks located accurately by hydrographer are encircled by dotted red curve. ✓
22. Unnecessary pencil notes have been removed. ✓
23. Objects on which signals are located and which fall outside of the low water line have been described on the sheet. ✓
24. The low water line and delineation of shoal areas have been properly shown. ✓
25. Degree and minutes values and symbols have been checked. ✓
26. Questionable soundings have been checked on the fathograms. ✓

27. Source of shoreline and signals (when not given in report).  
T-11219 & T-11216
28. All notes on sheet are in accordance with figure 171 in the Hydrographic Manual. ✓
29. All aids located, with those on contemporary topographic sheets, have been shown on survey. ✓
30. Depth curves were satisfactory except as follows:  
*Crossings were poor where '60 & '61 work cross - The more recent '61 work was accepted except for some shoaler '60 work, Linen overlays were made of the omitted soundings*
31. Sounding line crossings were satisfactory except as follows: ✓
32. Junctions with contemporary surveys were satisfactory except as follows: ✓  
*3 soundings on H-8497 were superseded by H-8631*
33. Condition of sounding records was satisfactory except as follows: ✓
34. The protracting was satisfactory except as follows: ✓  
*Positions 13 to 33 '61 day were smooth plotted on the wrong arc*
35. The field plotting of soundings was satisfactory except as follows: ✓
36. Notes to reviewer:  
*See additional notes added*

## Additional Notes

1. Positions 13 to 32 "c" day (5-16-60) have been plotted out of position by the smooth plotter. The line was plotted on an ~~arc~~ arc that is  $\frac{1}{2}$  mile too close to signal Page and this error was repeated between these positions. The boat sheet is plotted correctly.

2. There was no triangulation station plotted on the smooth sheet.

A described topographic station was used as a reference station, but the position values were not filled in on stamp #42 on the smooth sheet.

Triangulation station Tuckernuck, 1887 was plotted on the smooth sheet and the name and values added to stamp #42

3 After positions 10 pa and 35 pa there is a note mentioning the possibility of a wreck. The fathogram has a slight stray like appearance, but I do not think it indicates a wreck.

- 4 Development of the shoals at positions  $41^{\circ} 18.62'$   
 $70^{\circ} 21.11'$ ,  $41^{\circ} 18.60'$   $70^{\circ} 21.22'$ , and  $41^{\circ} 18.60'$   
 $70^{\circ} 21.35'$  show a discrepancy between  
g b day and the base lines and splits.  
g b day was the development and the latest  
work, so it was plotted to supersede the other  
days. The three shoal ~~area~~ soundings mentioned  
above were plotted from ~~the~~ the previous work  
because they were neither proved nor disproved.
- 5 Position 20 r. to 22 r. are doubtfully plotted on  
smooth sheet. The soundings have not been  
inked as they do not agree with soundings  
in this area. This line is not necessary to  
develop this area.
- 6 Soundings between 15 s and 17 s have not  
been inked on smooth sheet. The positions  
are doubtful and the line not necessary.

7. The rock (\*20) at  $41^{\circ}18.62'$ ,  $70^{\circ}15.36'$  was located and inked on sheet from note in sounding volume at position 56 v day, Volume 7, page 58. The bathogram has a penciled note of rock and the volume note. I do not know if the hydro party sighted this rock or if it was taken from the bathogram. Photogrammetry could not locate a rock at this location and I do not think the bathogram is evidence of a rock without any other support.

8. The rock (2 Rk) at  $41^{\circ}18.69$ ,  $70^{\circ}15.58'$  was located and inked on smooth sheet from note in sounding volume at positions 8 u and 41 w, volume 7. Photogrammetry could not locate this rock.

9. Position 60 v was not plotted or inked on smooth sheet and soundings from 59 v to 61 v were not inked as they do not agree with surrounding hydro.

10. Soundings from 1 wa through 12 wa have not been inked on smooth sheet. They are in poor agreement with surrounding hydro. The area is sufficiently developed. See note in sounding volumes and on fathogram (no take up reel was used)
11. Soundings between 44 ca day and 65 ca day have been corrected to compensate for excessive speed of <sup>the</sup> fathometer a correction of from -2% to -9% was necessary. This correction caused good agreement between 'ca' day and the adjacent <sup>lines</sup> and crosslines. Fathometer #162 SPX
12. A speed correction ~~equaling~~ -7% was applied to soundings 13 to 14 y day. This line is in good agreement now. Fathometer #162 SPX
13. Positions 27-43 'd' day (red) are not smooth plotted. These displaced positions are superseded by 1961 air photo location of this shoal. See note Page 68, Vol. ~~28~~ 29

14 The area of breakers at  $41^{\circ}19' - 70^{\circ}23'$  was developed in 1960 and 1961. There are discrepancies between the soundings of these two years, in some places, probably due to the changeable nature of the bottom in this area. It has also been noted in the sounding volumes that the breakers greatly effected the time and course of the soundings lines. This effect of the breakers may be the cause of some discrepancies in contemporary work.

No attempt has been made to adjust the spacing of soundings except where a note has stated there is a change of speed.

All shoals have been plotted from both seasons work because I do not feel there was enough developement in 1961 to supersede the 1960 work.

An overlay on tracing linen has been put in the descriptive report to show the soundings that were not plotted on the smooth sheet.

15. Splits were run at position  $41^{\circ}19.50 - 70^{\circ}15.00$ . with 'bb' day (7 Oct. 1961) splitting 'e' day (May 18-1960).

The hydrographer seems to have applied the shoran correctors from the preceding day, when 'e' day was done. With these corrections the boat sheet shows good develop<sup>ment</sup> in this area with good spacing. When the smooth <sup>sheet</sup> was plotted with 'b' day and 'e' day plot in the same line.

'ee' day will supercede 'bb' day where both lines cannot be inked.

16. Position 144 and 145 'd' day (red) have not been plotted as their hydro does not agree with the ~~boat sheet~~ surrounding hydrography. Position 146 agrees with the boat sheet and hydro. Position 147 was taken from the boat sheet. and the hydro and spacing are good.

- 17 Position 1 to 5 'd' b' day do not plot within the limits of this sheet.
- 18 Soundings between 17 and 18 'g' b' day have not been plotted - Tathometer trouble. This line is not necessary for the development of this area.
- 19 Due to the excessive development of some areas and the discrepancies in crossings between 1960 and 1961 work, it was necessary to make numerous overlays to determine what soundings should be inked. Depth curves were sketched on overlays on much of the sheet (60%) so that a clear picture of their delineation could be obtained.

*EHC*

TIDE NOTE FOR HYDROGRAPHIC SHEET

11/6/62

Nautical Chart Division: K. H. Carstens

Plane of reference approved in  
30 volumes of sounding records for

HYDROGRAPHIC SHEET 8631

Locality Nantucket Sound

Chief of Party: K. A. MacDonald (1960 and 61)

Plane of reference is mean low water reading

ft. on tide staff at

17.1	ft. below B. M. 1	(1960)							
2.4	ft. on tide staff	at Muskeget Island	{	May-June 1960)					
2.2	" " " " " "	" " " " " "	{	July 1960)					
2.5	" " " " " "	" " " " " "	{	August 1960)					
1.7	" " " " " "	" " " " " "	{	All season 1961)					

Height of mean high water above plane of reference is 2.0 ft.

Condition of records satisfactory except as noted below:

  
Chief, Tides and Currents Branch

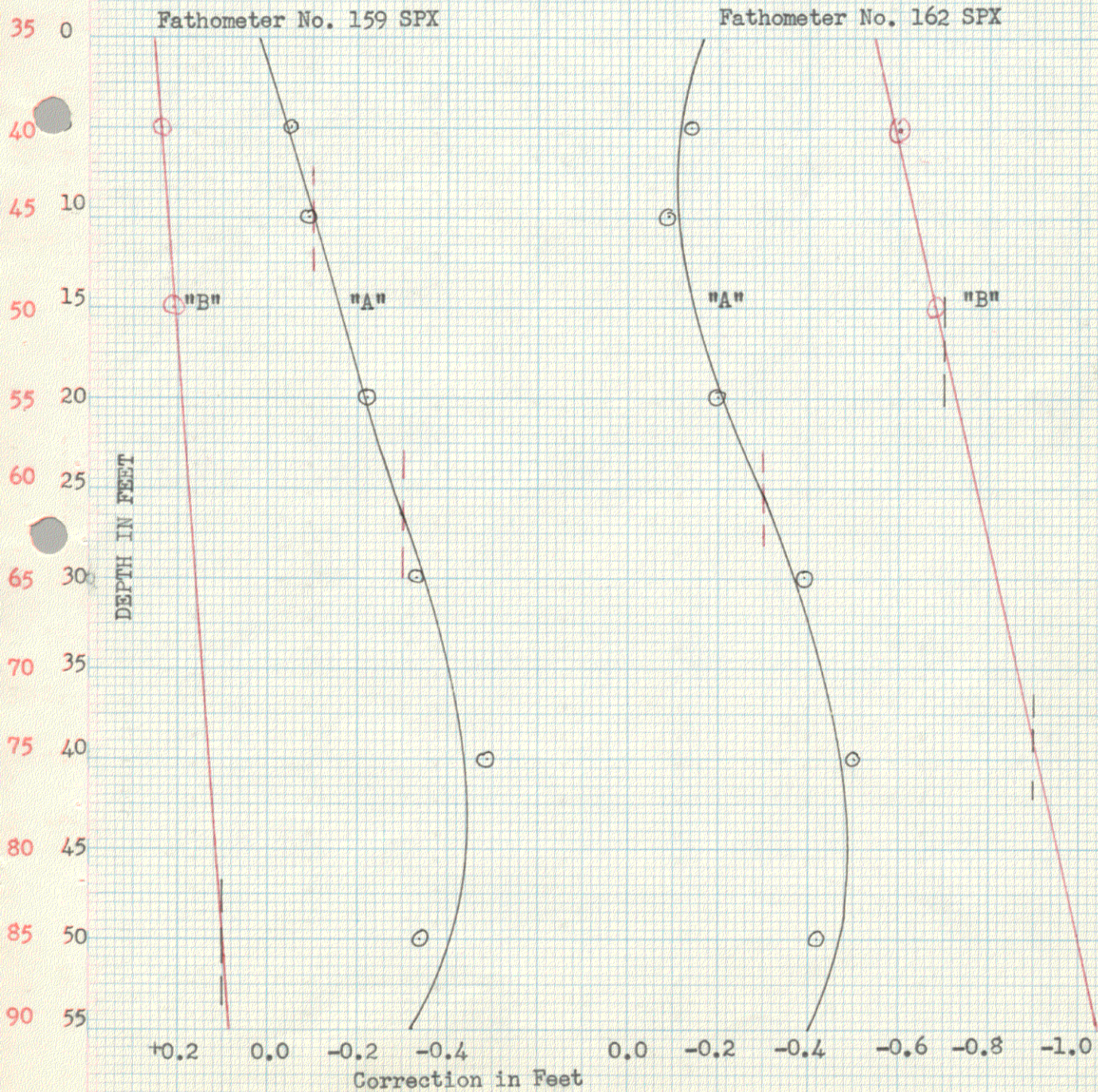
#8631

VELOCITY CORRECTIONS

Station: Ship GILBERT

1960 Field Season

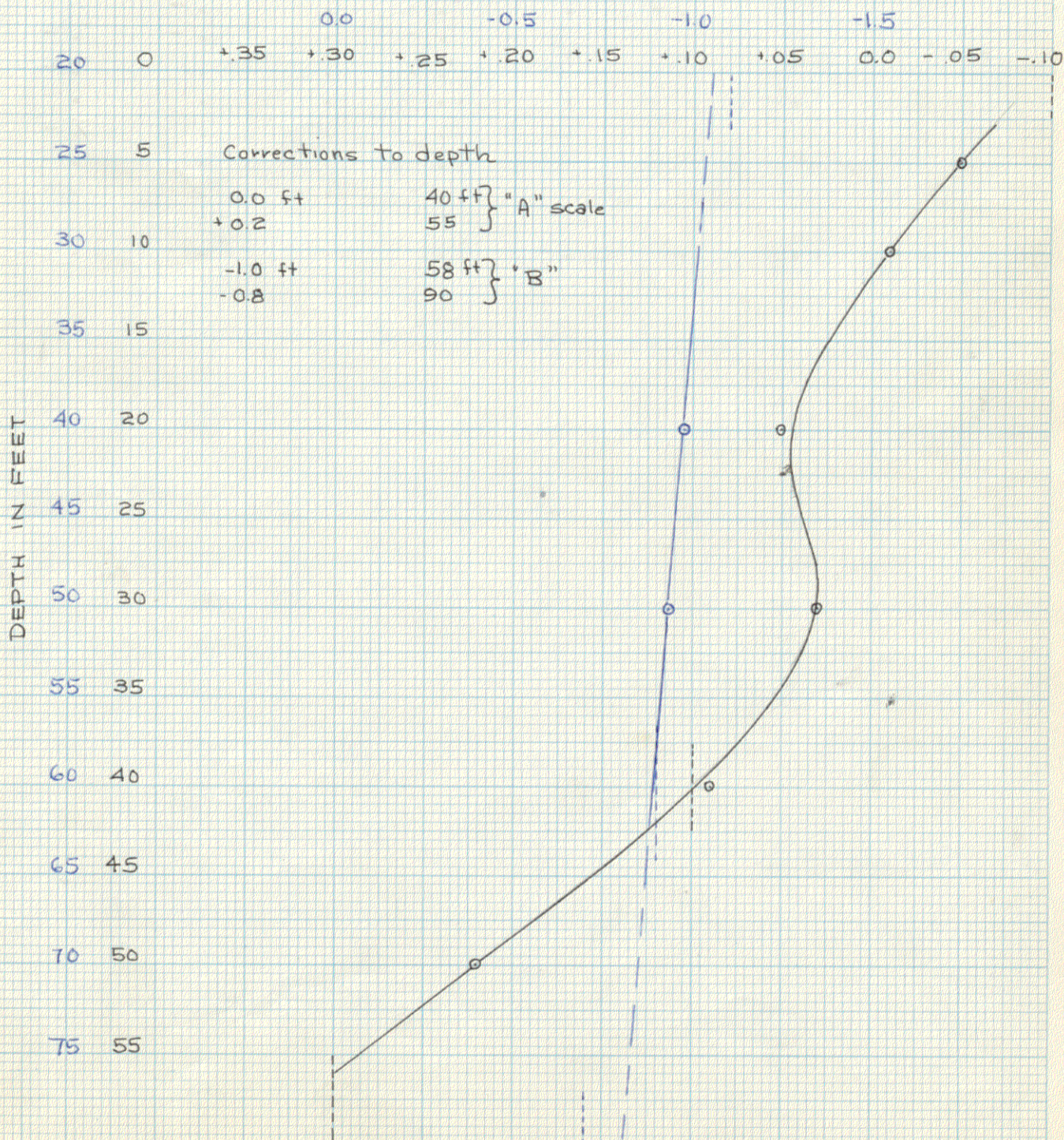
Hydrographic Surveys Nos. GI-10-1-60 and GI-12.5-1-60



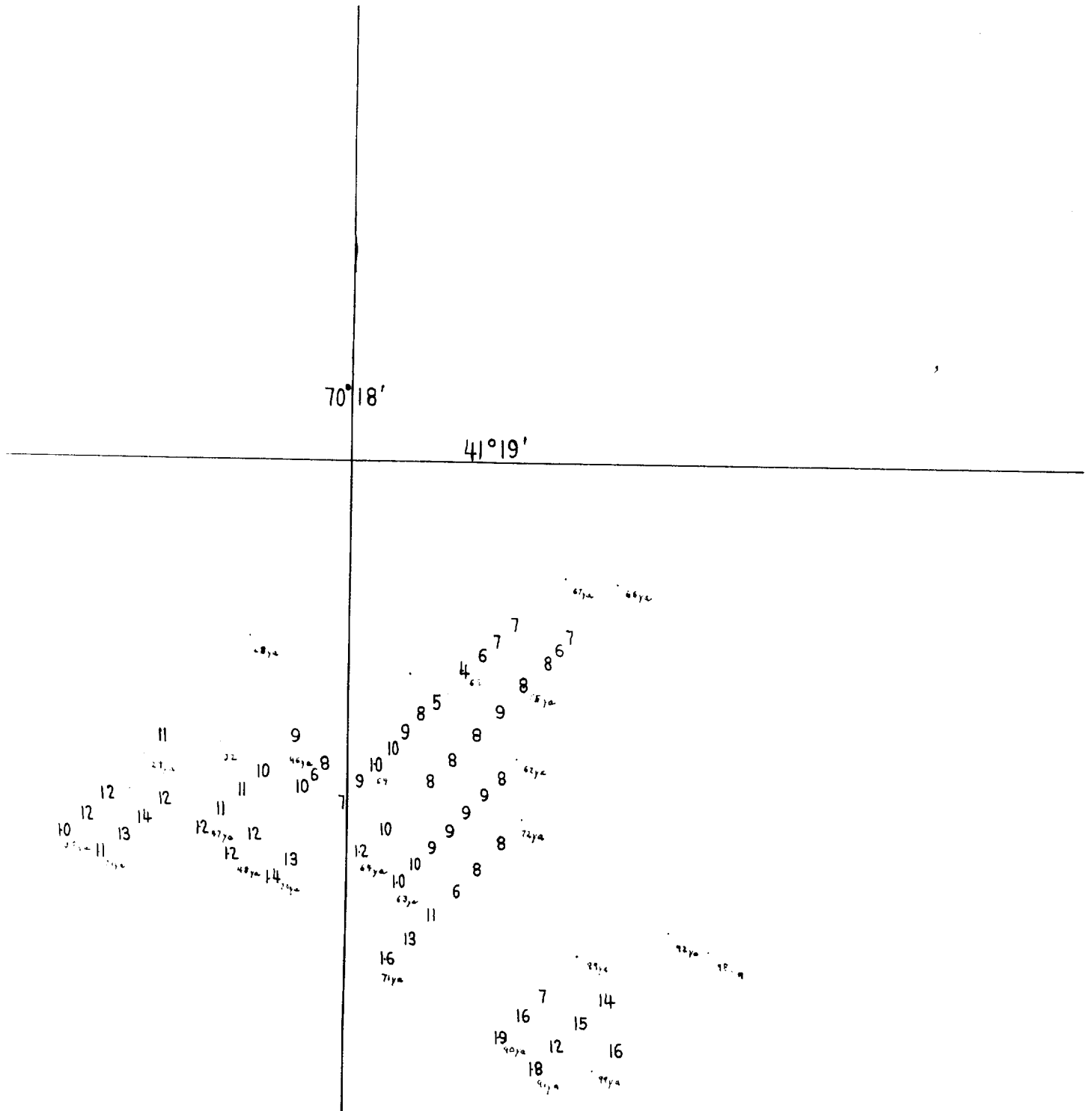
Station:

SHEET	DAY	DATE	FATHOMETERS	LAUNCH
GI 10-160	ha-gb	15 Aug - 13 Oct '61	161 SPX, 162 SPX, S108	1176
GI 12.5-1-60	ga	29 Aug	162 SPX	1176

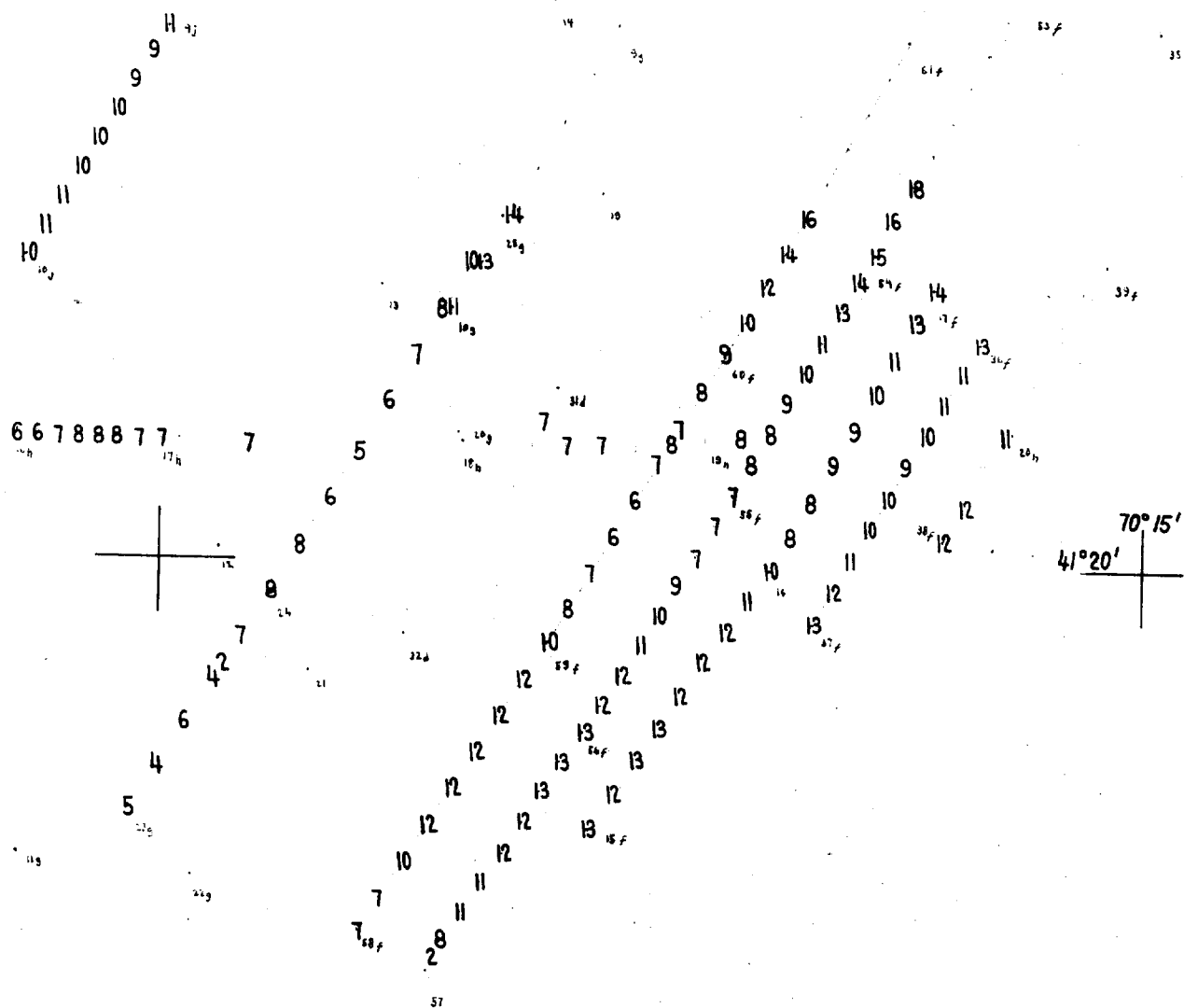
## CORRECTIONS IN FEET



28'ya day' through 99'ya da  
Sep 29 1961 H-8631

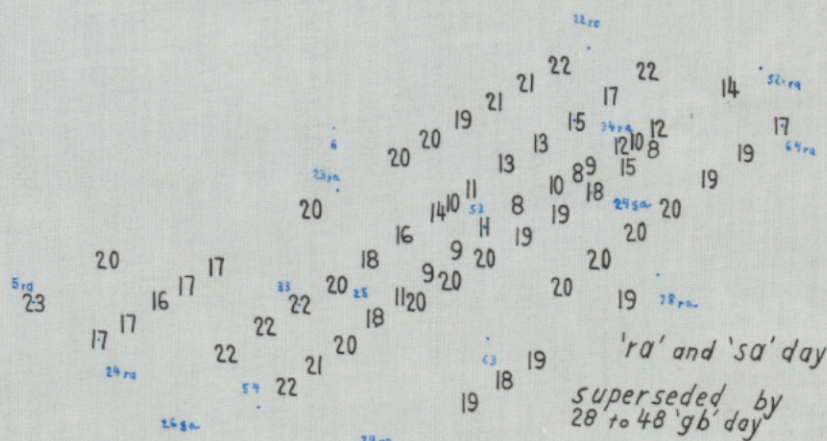
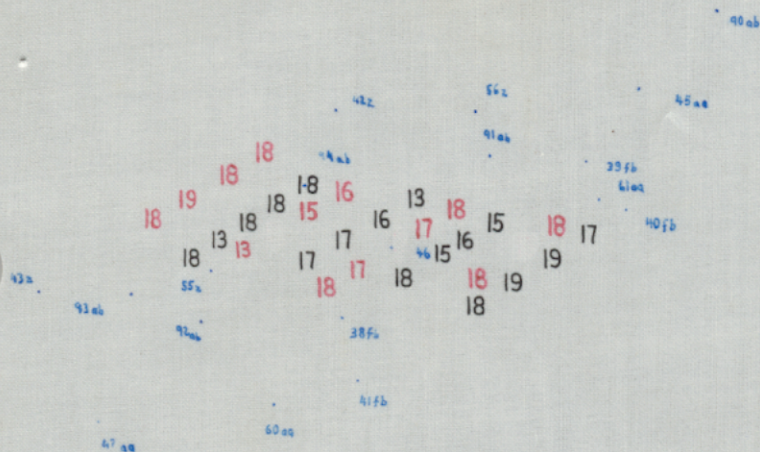


'5' day 5-21-60

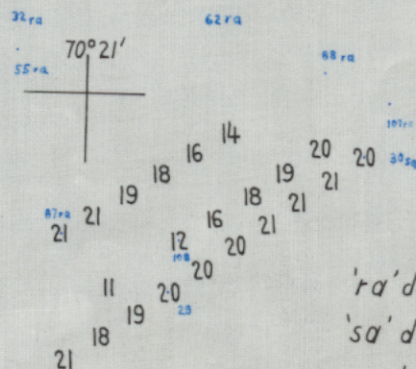


'fb' day 10-12-61

superseded by  
'gb' day 10-13-61



'ra' and 'sa' day  
superseded by  
28 to 48 'gb' day



'ra'day 8-30-61

'sa' day 9-8-61

superseded on smooth sheet by  
gb day 10-13-61 (pos. 49-59)

 $41^{\circ} 18'$

These soundings are not plotted on the  
smooth sheet

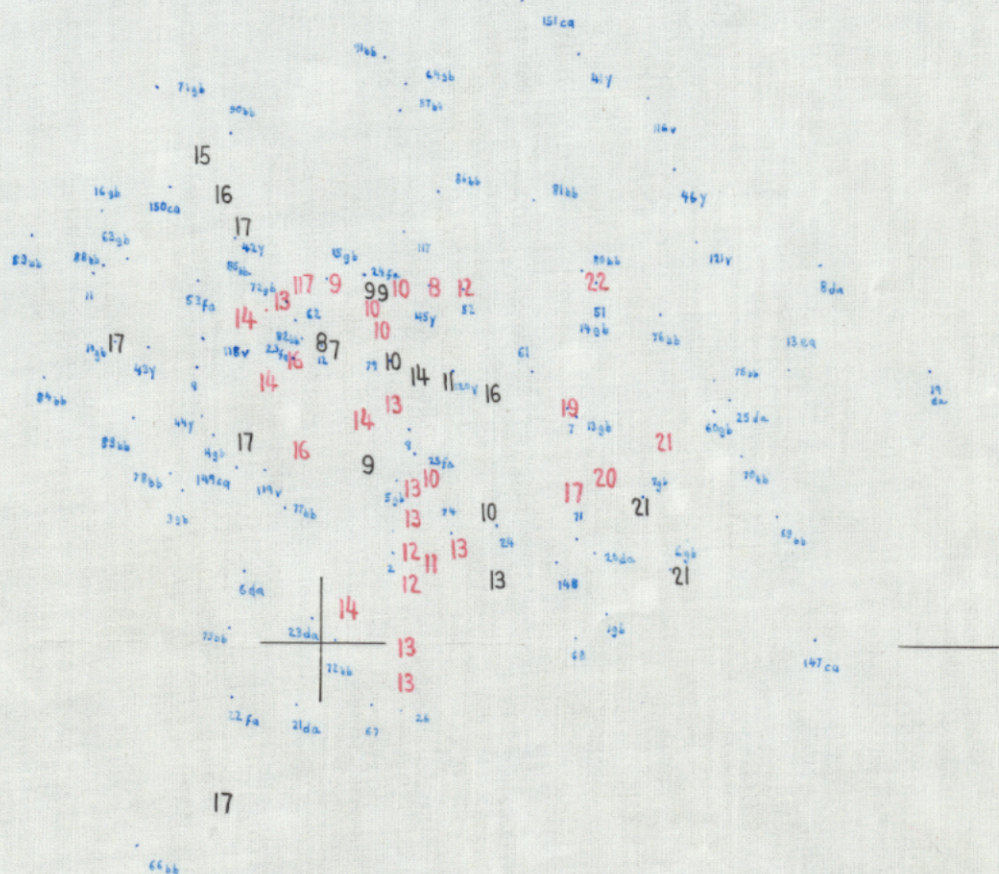
Red - 1960 work

Black - 1961 work

70° 23'

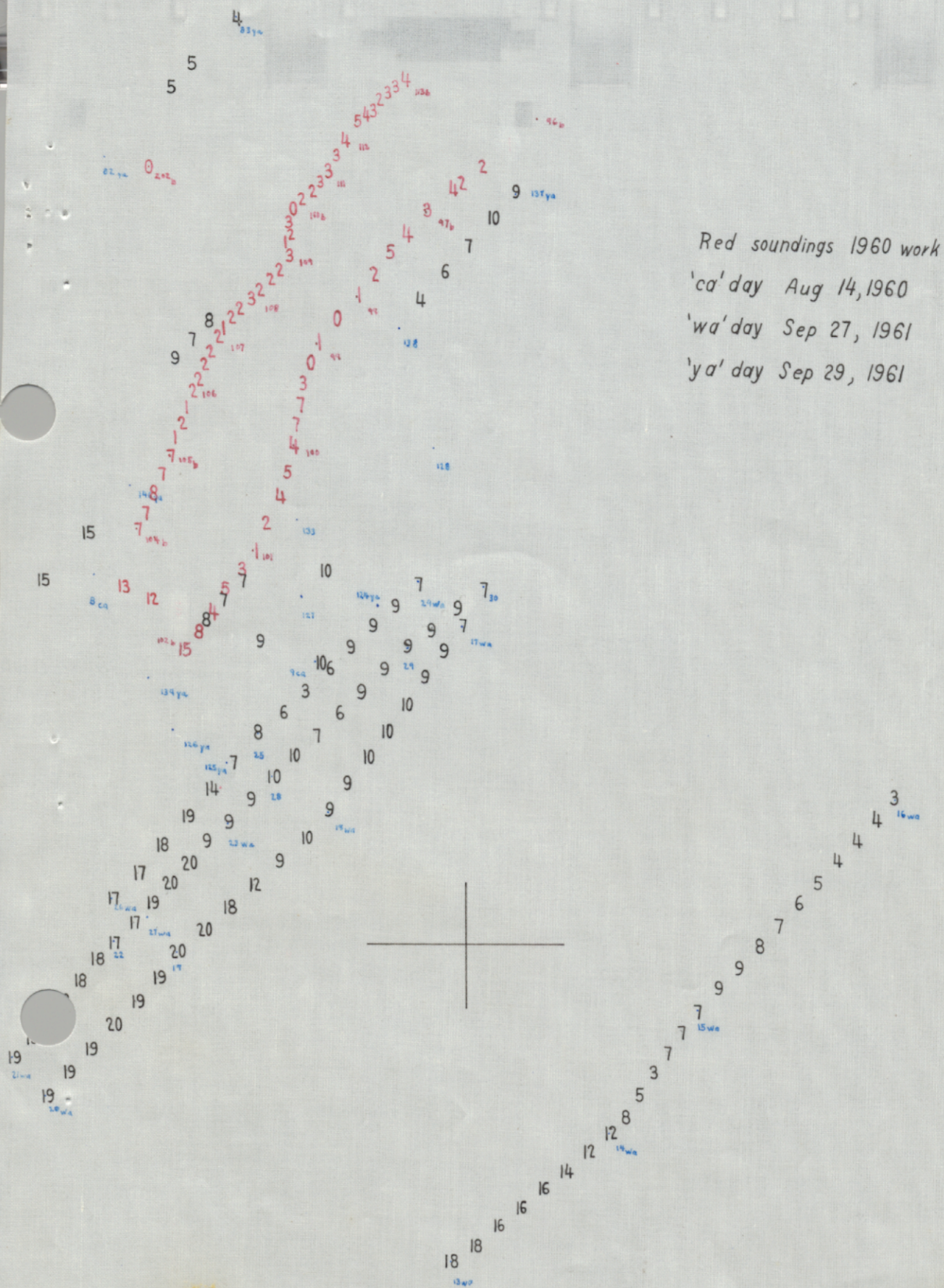
41° 19'

17



70°17'

41°19'

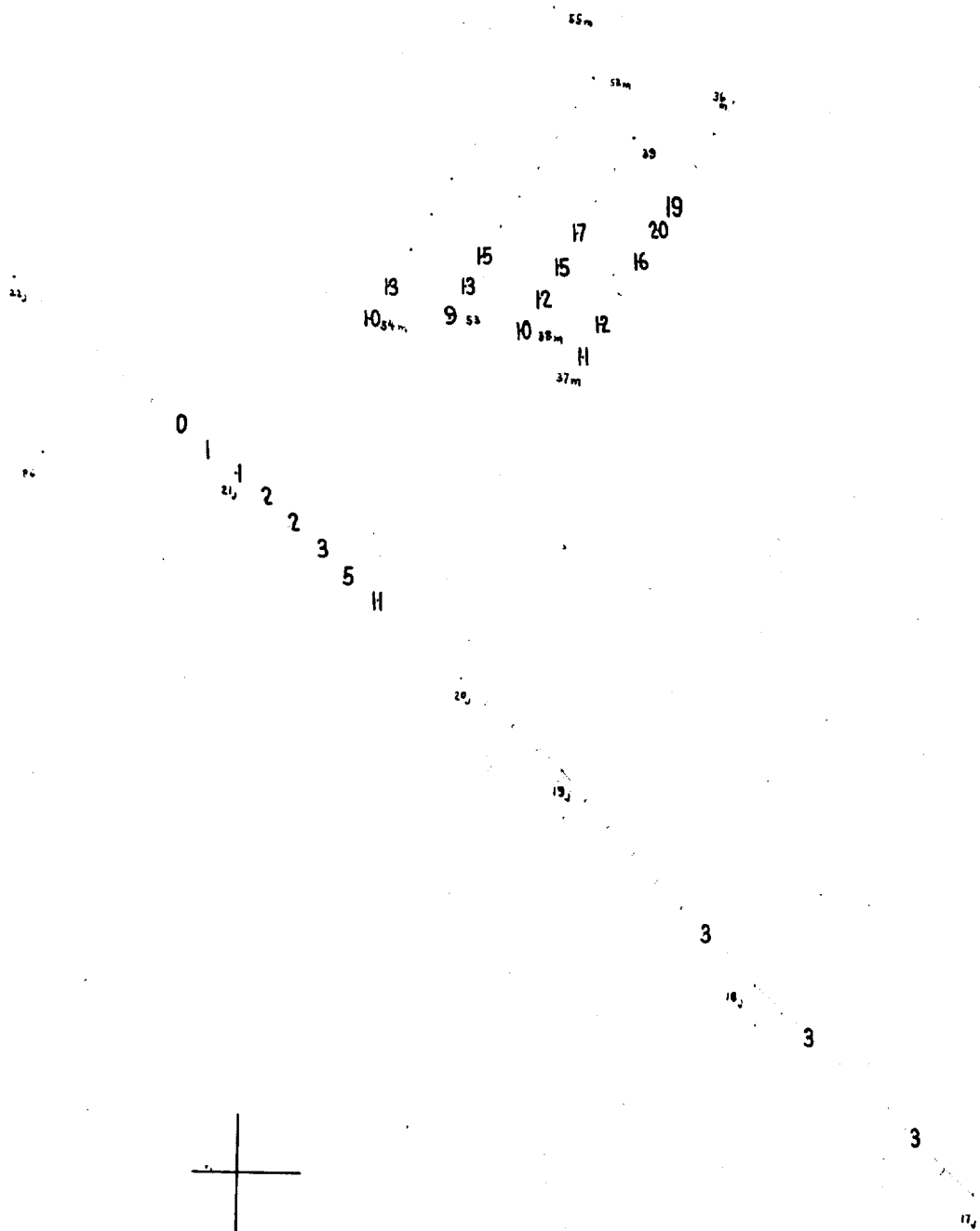


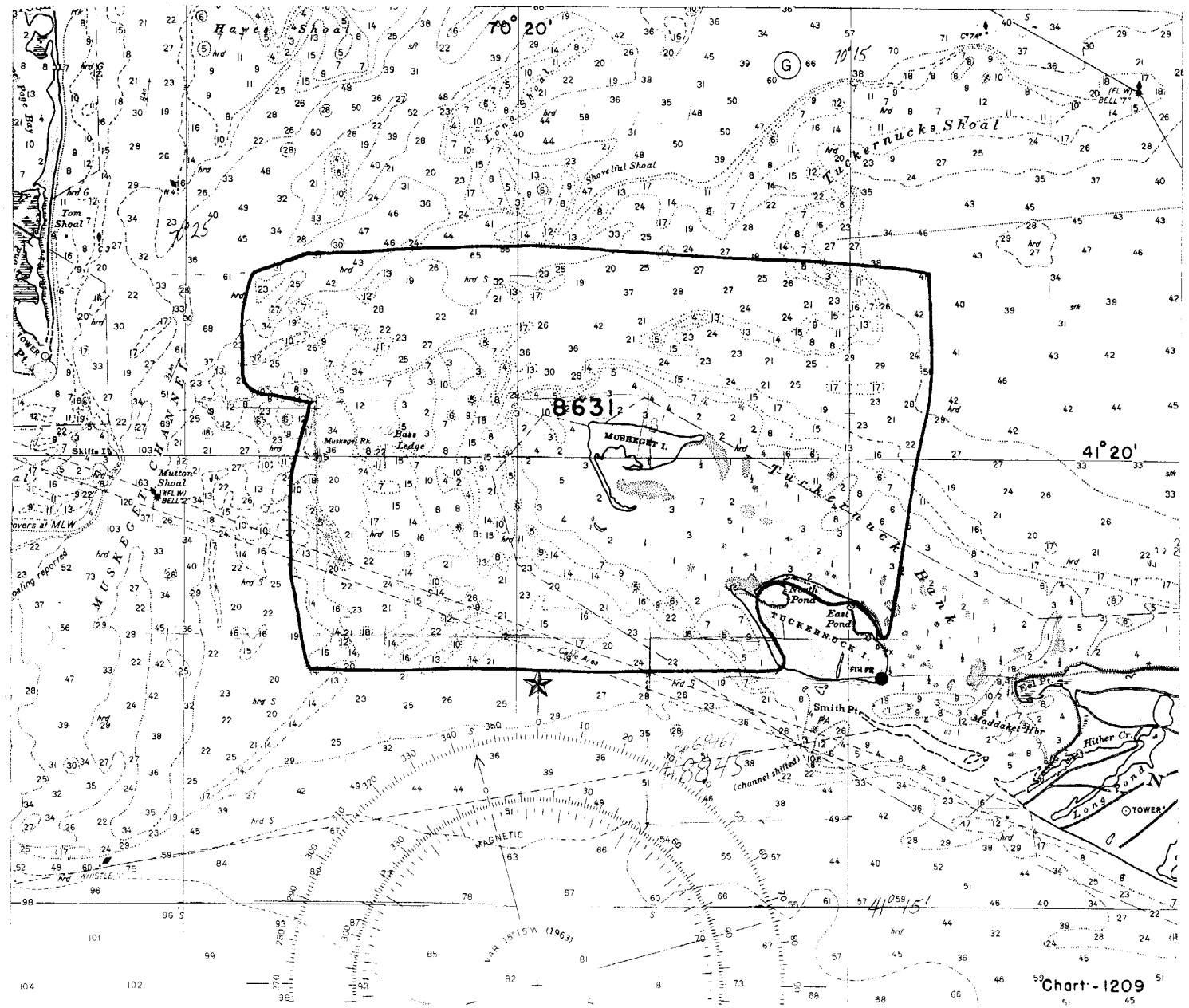


70° 17'

41° 21'

m'day June 6, 1960  
J day June 2, 1960





SURVEY NO. H-8631

[illegible]

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.